

# Organic Semiconductor Devices and Methods of Fabrication

## Abstract of Disclosure

This invention discloses structures of organic materials-based semiconductor devices and methods for the fabrication of such devices. According to this invention, each of the devices has a first part and a second part. The first part has at least a first organic semiconductor material layer deposited on a first electrode and the second part has at least a second organic semiconductor material layer deposited on a second electrode. Said device is formed by assembling the two individual parts together. Each part maybe fabricated separately and consists of an electrode coated with semiconductor organic materials required by the function of the desired device. A schematic diagram in the Figure 3 shows a first part (11) consisting of a first substrate (13), a first electrode (14) and at least one layer of organic materials (15); the second part (12) of the device consisting of the second substrate (16), a second electrode (17) with at least a layer of organic materials (18). The organic device (10) is finally obtained by combining the first part (11) with the second part (12) under controlled environment. This is preferably done by aligning the first part (11) onto the second part (12), and then by initiating a cross-link between organic material (15) and organic material (18) via heating, electron beam or light irradiation.